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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,817	01/09/2004	Markus Schwambra	03345-P0047A	1549
24126	7590	09/08/2005	EXAMINER	
ST. ONGE STEWARD JOHNSTON & REENS, LLC 986 BEDFORD STREET STAMFORD, CT 06905-5619			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/754,817

Applicant(s)

SCHWAMBERA ET AL.

Examiner

Sylvia R. MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 3-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 and 11-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/12/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of claims 2 and 11-18 in the reply filed on 9/3/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2, 11, 14-16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hey et al (US 4,987,856).

Regarding claim 2: Hey et al is an apparatus for depositing crystalline layers on crystalline substrates resting on rotationally drivable substrate holders 30 in a process chamber 10 of the apparatus, the substrate holders being disposed around the rotational center of a rotationally drivable substrate holder carrier which substrate holders together with the substrate holder carrier form a process chamber base, opposite which there is a process chamber cover with a central gas inlet element 50 the central region of the process chamber base giving off heat to one or more gaseous starting materials introduced into the process chamber through the gas inlet element as a result of heating characterized in that the central region of the process chamber base is rotationally drivable in

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relation to the substrate holder carrier and the process chamber cover or the gas inlet element, see Figs. 5 and 6.

Regarding claim 11: Apparatus according to Claim 2, characterized in that the substrate holders and a center plate, which with its surface forms the central region, are rotationally mounted on a gas cushion., see abstract and col.5 lines 8-51.

Regarding claim 14: Apparatus according to Claim 11, characterized in that the center plate rotates in the same direction as or in the opposite direction to the substrate holder carrier. See Fig. 4.

Regarding claim 15: Apparatus according to Claim 11, characterized in that the center plate is carried by substrate holder carrier, see Fig. 4.

Regarding claim 16: Apparatus according to Claim 11, characterized in that the substrate holder carrier comprises more than one pad and is held centrally by two clamping plates, the center plate lying above an uppermost of the two clamping plates, see cols. 3-5.

Regarding claim 18: Apparatus according to Claim 11, characterized in that the center plate is rotationally driven mechanically by means of a drive shaft or by means of drive wheels, see col. 7 .

3. Claims 2 and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Burk, Jr. (US 5,788,777).

Regarding claim 2: Burk, Jr. is an apparatus for depositing crystalline layers on crystalline substrates resting on rotationally drivable substrate holders 88 in a process chamber 16 of the apparatus, the substrate holders being

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disposed around the rotational center of a rotationally drivable substrate holder carrier 22 which substrate holders together with the substrate holder carrier form a process chamber base 29, opposite which there is a process chamber cover with a central gas inlet element 32 the central region of the process chamber base giving off heat to one or more gaseous starting materials introduced into the process chamber through the gas inlet element as a result of heating characterized in that the central region of the process chamber base is rotationally drivable in relation to the substrate holder carrier and the process chamber cover or the gas inlet element, see col. 2 lines 36-43.

Regarding claim 11: Apparatus according to Claim 2, characterized in that the substrate holders and a center plate, which with its surface forms the central region, are rotationally mounted on a gas cushion., see abstract and and col.4 lines 10-25.

Regarding claim 12: Apparatus according to Claim 11, characterized in that a thermal conductivity of the gas cushion carrying and rotationally driving the center plate can be set by choosing the gas mixture, the gas mixture comprising a gas with a high thermal conductivity and a gas with a low thermal conductivity, see col. 2 lines 49-54.

Regarding claim 13: Apparatus according to Claim 11, characterized in that the center plate consists of graphite, an inert metal, ceramic or quartz, see col. 3 lines 27-44.

Regarding claim 14: Apparatus according to Claim 11, characterized in that the center plate rotates in the same direction as or in the opposite direction to the substrate holder carrier. See col. 2 lines 58-64 and col. 3 lines 1-27.

Regarding claim 15: Apparatus according to Claim 11, characterized in that the center plate

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is carried by substrate holder carrier, see Fig. 4.

4. Claims 2 and 11-13,15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Geelen et al (US 6,080,642).

Regarding claim 2: Van Geelen et al. is an apparatus for depositing crystalline layers on crystalline substrates resting on rotationally drivable substrate holders 2 in a process chamber 10 of the apparatus, the substrate holders being disposed around the rotational center of a rotationally drivable substrate holder carrier which substrate holders together with the substrate holder carrier form a process chamber base, opposite which there is a process chamber cover with a central gas inlet element the central region of the process chamber base giving off heat to one or more gaseous starting materials introduced into the process chamber through the gas inlet element as a result of heating characterized in that the central region of the process chamber base is rotationally drivable in relation to the substrate holder carrier and the process chamber cover or the gas inlet element, see Figs. 1 and 2.

Regarding claim 11: Apparatus according to Claim 2, characterized in that the substrate holders and a center plate, which with its surface forms the central region, are rotationally mounted on a gas cushion., see abstract and and col.4 lines 49-67.

Regarding claim 12: Apparatus according to Claim 11, characterized in that a thermal conductivity of the gas cushion carrying and rotationally driving the center plate can be set by choosing the gas mixture, the gas mixture comprising a gas with a high thermal conductivity and a gas with a low thermal conductivity, see col. 6 lines 27-50.

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Regarding claim 13: Apparatus according to Claim 11, characterized in that the center plate consists of graphite, an inert metal, ceramic or quartz, see col. 7 lines 13-29.

Regarding claim 15: Apparatus according to Claim 11, characterized in that the center plate is carried by substrate holder carrier, see Fig. 1.

Regarding claim 17: Apparatus according to Claim 11, characterized by a coaxial supply line of the gas streams forming the gas cushions, see Fig. 1 and col. 14-67.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burk, Jr or Van Geelen et al in view of Paisley et al (US 2002/0090454).

The teachings of Burk, Jr and Van Geelen et al have been discussed above.

Both fail to teach how the center plate rotates.

Paisley et al teaches a gas driven rotation apparatus wherein a center plate 132 and substrate holders 132 rotate as the entire support platter 130 rotates, see abstract and [0030].

Regarding claim 14: Apparatus according to Claim 11, characterized in that the center plate rotates in the same direction as or in the opposite direction to the substrate holder carrier, see [0030] of Paisley et al.

Regarding claim 18: Apparatus according to Claim 11, characterized in that the center plate

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is rotationally driven mechanically by means of a drive shaft or by means of drive wheels, see[0036] .

The motivation to provide the rotational enhancing components of Paisley et al is that they allow the central plate and the supporting surfaces to rotate and provide more uniform processing of the wafers. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to combine the teachings of Burk, Jr. or Van Geelen et al with those of Paisley et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sylvia R MacArthur  
Patent Examiner  
Art Unit 1763

September 6, 2005